

*U.S. Antarctic Marine Living Resources Program*  
*2008-2009 Weekly Field Reports*  
*Cape Shirreff, Livingston Island*

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**Seabirds:**

1. Gentoo penguins in our reproductive study have completed crèche formation this week; 82% of nests in the reproductive study crèched at least one chick and 18% have failed. The median date of crèche was January 13, 2008, on average 1.34 chicks crèched per nest. In the three weeks since peak chinstrap penguin hatch two of the chinstrap penguin reproduction nests have crèched chicks, 70% are brooding chicks, 28% have failed.
2. We continue to monitor known age penguins that were banded here as chicks. Of the 37 known aged gentoo penguins that have nested 42% have crèched chicks 4% are still brooding chicks and 38% have failed. All of the forty known aged chinstrap penguins have hatched or failed, 59% have hatched and 41% nests have failed.
3. The brown skuas continue to hatch this week. Of the 21 brown skua pairs that have initiated clutches 13 have hatched, two continue to incubate and six have failed.
4. Currently we have 10 Time Depth Recorders (TDRs) and 10 Satellite Transmitters (PTTs) on gentoo penguins with crèched chicks and 4 TDRs and six PTTs on nesting chinstraps. We will retrieve these instruments in the coming days.
5. We continue to sample the diets of the penguins using the wet offloading technique. To date, we have collected 15 diet samples



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from chinstraps and 10 from gentoos. Chinstrap diet samples have consisted almost entirely of Antarctic krill (*Euphausia superba*) with trace amounts of fish. Gentoo samples were a mix of Antarctic krill and fish. To date, we have only found otoliths from the species *Pleurogramma antarcticum*.

## Pinnipeds:

6. We recovered one of our GPS/time depth recorder (GPS-TDR) instruments. It successfully recorded diving behavior and foraging locations for the first eight trips to sea for one of our attendance study females. She was instrumented with a GPS-TDR on one of her last days of her perinatal visit. We still have four more of this type of instrument to recover and we will be deploying an additional five for February foraging location data.
7. All but two of our 29 attendance study females have completed at least six trips to sea. Mean trip duration for each trip is as follows (for comparison we have included last year's trip durations in parentheses following standard deviation and sample size): first trip 2.8d (s.d. =1.2, n=29, 4.1d last year), second trip 2.6d (s.d. =1.1, n=29; 4.1 d last year), third trip 2.7d (s.d.=0.8, n=29), fourth trip 2.7d (s.d.=0.8, n=29; 3.3d last year), fifth trip 2.5d (s.d.=0.8, n=27; 3.4d last year), sixth trip 2.6d (s.d.=0.6, n=23; 3.8d last year). Four attendance females lost their pups (likely to leopard seal predation) before completing six trips. These females were excluded from calculations after their pups were lost (trip 5, n=2 and trip 6, n=4).



8. We continued identifying the sex and collecting DNA of tagged females' pups. We have identified the sex of 83.7% of tagged females' pups and have

collected DNA for over 50% of the pups. Mortality rate since arrival of leopard seals has increased to 16.3%.

9. We had a pregnant tagged female arrive this week. She gave birth yesterday, almost 3 weeks after the last pup was born. This arrival and birth brings over-winter survival and natality rate to 83.5% and 83.1%, respectively.
10. Daily tag re-sights continued this week. We have re-sighted 111 fur seals tagged as pups in previous years. To date we have seen two yearlings.
11. Fur seal diet sampling continued this week with the collection of ten more scats, bringing our total to 50. As in previous years, we transferred scat samples (n=40) to the ship, where running water facilitates analysis.
12. We deployed two over winter satellite relay data loggers on elephant seals. We have had only one return from last year and she had lost her PTT. We are still hoping for a few more to return with instruments.
13. We tagged two more leopard seals this week bringing the total tagged this year to nine. We have recorded an additional eight tagged from previous years. One of these has lost her tag but has other characters that have allowed a positive identification. We will re-tag her soon. We now have three leopard seals instrumented with VHF radio transmitters to record haul-out patterns.

## Weather:

14. We had a high of 7.2 degrees Celsius



and a low of 0.4. The mean was 3.2 degrees. This is the second week in which temperatures were above freezing at night. Mean wind speed for the week was 11.4 and the max. gust was 40.0mph. More than 50% of the recorded wind directions were from the west. We have had more precipitation this week than any week since we opened camp.

## Camp:

15. The R/V *Yuzhmorgeologia* arrived off of Cape Shirreff on Monday afternoon, (January 12). They successfully re-supplied camp and the offload took approximately four hours even though our ATV had problems and was not offloaded. We welcomed three new members to our Cape Shirreff team, Lt.J.G. Raul Vasquez del Mercado, NOAA corps officer, La Jolla, CA; Luis Huckstadt, University of California-Santa Cruz; and Carolina Bonin, Scripps Institute of Oceanography, La Jolla, CA. We are very grateful to all the crew and science staff of the R/V *Yuzhmorgeologia* for all their help with the off load, for delivering mail and Christmas presents, and our new enthusiastic teammates.

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*Submitted by AMLR staff currently residing at the Cape Shirreff field station, Livingston Island.*

